

## PATENT ABSTRACTS OF JAPAN

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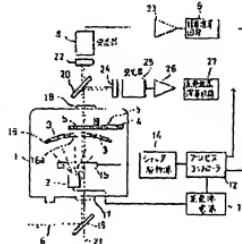
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**(54) MONITOR EQUIPMENT FOR EVAPORATION RATE AND FILM THICKNESS OF VACUUM DEPOSITION DEVICE**

**(57)Abstract:**

PURPOSE: To permit measurement and control of evaporation rates even if the number of thin optical film layers increase by providing plural sheets of monitor glass, photodetectors for measuring short and long wavelengths and respective arithmetic circuits for vapor deposition speeds and film thicknesses and a controller of evaporation process.

CONSTITUTION: Measuring beams 6, 21 of short and long wavelengths are simultaneously projected to a sheet of the monitor glass 5 and the light transmitted through a half mirror 20 is filtered 22 so that only the beam 6 is transmitted therethrough. Said beam is guided to the 1st photodetector 8, the output of which is inputted via an amplifier 23 to the arithmetic circuit 9 for the film thickness. On the other hand, the light reflected from the half mirror 20 is filtered 24 so that only the measuring beam 21 of wavelength about several times the wavelength of the beam 6 is transmitted therethrough. Said beam is similarly inputted to the 2nd photodetector 25 and an amplifier 26 to the arithmetic circuit 27 for the evaporation rate. A process controller 12 controls the film thickness and evaporation speed to desired values at every formation of the respective layers by the predetermined sequence while controlling a power supply 13 for a vapor source 2 and a driving source 14 for a shutter 15. The multi-layered thin optical films are thus formed on a product 3.



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